

I claim:

1. A color field sequential projector comprising:

a light source that provides light in a first waveband region and in a second waveband region, wherein said first waveband region is distinct from said second waveband region;

an electronically controllable quarter waveplate that receives said light from said light source, wherein said electronically controllable quarter waveplate is adapted for being electronically switched between a first state and a second state, wherein in said first state said waveplate defines a birefringent delay corresponding to one quarter of a wavelength of light in said first waveband region and in said second state said waveplate defines a birefringent delay corresponding to one quarter of a wavelength of light in said second waveband region; and

a reflection device that receives said light from said electronically controllable quarter waveplate.

2. The projector of claim 1 wherein said a light source provides light in a third waveband region wherein said third waveband region is distinct from said first and said second waveband regions, wherein said electronically controllable quarter waveplate is adapted for being electronically switched between said first state and a third state, and wherein in said third state said waveplate defines a birefringent delay corresponding to one quarter of a wavelength of light in said third waveband region.

3. The projector of claim 2 wherein said first waveband region comprises green light, said second waveband region comprises blue light, and said third waveband region comprises red light.

4. The projector of claim 1 further comprising a second electronically controllable quarter waveplate that receives said light from said light source, wherein said second electronically controllable quarter waveplate is adapted for being electronically switched between a third state and a fourth state, and wherein in said third state said waveplate defines a birefringent delay corresponding to one quarter of a wavelength of light in a third waveband region provided by said light source and in said fourth state said waveplate defines a birefringent delay corresponding to one quarter of a wavelength of light in a fourth waveband region provided by said light source.

5. The projector of claim 1 wherein said electronically controllable quarter waveplate is electronically switched between said first state and said second state by changing a voltage applied to said quarter waveplate by a controller.

6. The projector of claim 1 wherein said reflection device comprises a liquid crystal display.

7. The projector of claim 1 further comprising a beam splitter that passes said light from said light source to said quarter waveplate.

8. The projector of claim 7 wherein said beam splitter comprises a glass prism.

9. The projector of claim 1 further comprising a projection device, wherein said projection device receives, and thereafter projects, light reflected by said reflection device in said first waveband region and in said second waveband region.

10. A color field sequential projector comprising:

a light source that provides light in a first waveband region, a second waveband region, and a third waveband region, wherein said first, second and third waveband regions are each distinct from each other;

a first quarter waveplate that receives light from said light source in said first and second waveband regions, wherein said first quarter waveplate is adapted for being switched between a first state and a second state, and wherein in said first state said waveplate reduces depolarization of skew rays in said first waveband region and in said second state said waveplate reduces depolarization of skew rays in said second waveband region;

a second quarter waveplate that receives light from said light source in said third waveband region, wherein said second quarter waveplate reduces depolarization of skew rays in said third waveband region;

a first reflection device that receives said light from said first quarter waveplate; and

a second reflection device that receives said light from said second quarter waveplate.

11. The projector of claim 10 wherein said first, second and third waveband regions are each chosen from the waveband regions consisting of green light, blue light, and red light.

12. The projector of claim 10 wherein said second quarter waveplate is adapted for being switched between a third state and a fourth state, and wherein in said third state said waveplate reduces depolarization of skew rays in said third waveband region and in said fourth state said waveplate reduces depolarization of skew rays in a fourth waveband region provided by said light source.

13. The projector of claim 10 wherein said first quarter waveplate is electronically switched between said first state and said second state by changing a voltage applied to said first quarter waveplate by a controller.

14. The projector of claim 10 wherein said reflection device comprises a liquid crystal display.

15. The projector of claim 10 further comprising a polarized light beam splitter that passes light from said light source to said first and second quarter waveplates.

16. The projector of claim 15 wherein said beam splitter comprises first and second prisms that define an interface positioned at a forty five degree angle to an axis of light propagation through the projector.

17. The projector of claim 10 further comprising a projection device, wherein said projection device receives, and thereafter projects, light reflected by said first and second reflection devices in said first, second and third waveband regions.

18. A method of providing a multicolor image, comprising the steps of:  
sequentially providing light in a first waveband region and light in a second waveband region, wherein said first waveband region is distinct from said second waveband region;  
providing an electronically controllable quarter waveplate that sequentially receives said light in said first and second waveband regions;  
electronically switching said quarter waveplate between a first state and a second state, such that said quarter waveplate is in said first state when said quarter waveplate receives said light in said first waveband region and such that said quarter waveplate is in said second state when said quarter waveplate receives said light in said second

waveband region, wherein in said first state said waveplate defines a phase retardation that increases a color purity of said first waveband region and in said second state said waveplate defines a phase retardation that increases a color purity of said second waveband region; and

providing a reflection device that sequentially receives said light in said first and second waveband regions from said electronically controllable quarter waveplate; and

providing a projection device that sequentially receives and thereafter sequentially projects said light in said first and second waveband regions reflected from said reflection device.

19. The method of claim 18 wherein said step of electronically switching said quarter waveplate between said first state and said second state comprises applying a first voltage to said quarter waveplate to place said quarter waveplate in said first state and applying a second voltage to said quarter waveplate to place said quarter waveplate in said second state, wherein said first voltage is distinct from said second voltage.

20. The method of claim 18 further comprising electronically switching said quarter waveplate between said first state and a third state, such that said quarter waveplate is in said first state when said quarter waveplate receives said light in said first waveband region and such that said quarter waveplate is in said third state when said quarter waveplate receives light in a third waveband region, wherein in said first state said waveplate defines a phase retardation that increases a color purity of said first waveband region and in said third state said waveplate defines a phase retardation that increases a color purity of said third waveband region.